



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/683,267	12/06/2001	Joanna L. Duncan	AL.US.9	3355
23731	7590	12/12/2003	EXAMINER	
DECKER LAW OFFICE 1 NEW HAMPSHIRE AVE. SUITE 125 PORTSMOUTH, NH 03801			LISH, PETER J	
			ART UNIT	PAPER NUMBER
			1754	

DATE MAILED: 12/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/683,267

Applicant(s)

DUNCAN ET AL.

Examiner

Peter J Lish

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-29 is/are pending in the application.
- 4a) Of the above claim(s) 17-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The Declaration under 37 CFR 1.132 filed 8/26/03 is insufficient to overcome the rejection of claims 1-16 based upon Aoki et al. taken with Alix et al. taken with Senjo et al. as set forth in the last Office action because of the reasons given below.

Applicant argues that the SO_x to NO_x ratio of the instant invention and that of Aoki et al. differ and add the limitation of at least a 2.5 to 1 ratio of SO₂ to NO₂ after oxidation. Applicant states that the prior art teaches that up to 50% of the SO₂ is converted when 90% of the NO is converted. It is additionally taught by Aoki et al. that the flue gas being treated contains, on average, a ratio of SO_x to NO_x of 5 to 1. Therefore, it is expected that after oxidation treatment, even at the highest rate of conversion, the gas will have a ratio of SO₂ to NO₂ of at least 2.5 to 1.

Applicant argues that it is not economical to use the electron beam oxidation method. It is noted that the rejection requires the substitution of the barrier discharge oxidation method of Alix et al. for the electron beam method of Aoki et al. Therefore, the argument is unpersuasive.

Applicant argues that the use of the electron beam oxidation method on a gas containing mercury may result in the formation of radicals which may disturb the process. Applicant fails to show evidence that mercury in the flue gas will result in a negative effect on the oxidation process, and it is therefore expected that the mercury will be oxidized, as is known in the art (see the reference to Alix et al.). Additionally, it is noted that the rejection requires the substitution of the barrier discharge oxidation method of Alix et al. for the electron beam method of Aoki et al. Therefore, the argument is unpersuasive.

Applicant argues that the substitution of a wet ESP, as taught by Alix et al., for the dry ESP of Aoki et al. would not have been obvious to one of ordinary skill because of economical

Art Unit: 1754

concerns. Alix et al. teach the use of a wet ESP to collect the oxidized mercury, therefore, because the wet ESP is known to achieve the same effect as the dry ESP, it remains an obvious variation. Additionally, the rejection requires the use of a scrubbing solution, which would thereby make the substitution of the wet ESP of Alix et al. for the dry ESP of Aoki et al. economically feasible, and therefore obvious.

In view of the foregoing, when all of the evidence is considered, the totality of the rebuttal evidence of nonobviousness fails to outweigh the evidence of obviousness.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-4 and 6-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al. (USPN 5,041,271) taken with Alix et al. (USPN 5,871,703) taken with Senjo et al. (USPN 4,035,470).

The rejection of the previous office action is maintained in its entirety and incorporated herein by reference.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Lish whose telephone number is 703-308-1772 until

Art Unit: 1754

December 11th and 571-272-1354 thereafter. The examiner can normally be reached on 9:00-6:00 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached at 703-308-3837 until December 11th and 571-272-1358 thereafter. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



PL

STUART L. HENDRICKSON
PRIMARY EXAMINER